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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/715,120 | 11/18/2003 | Eiji Suzuki | 045237-0123 | 2751 |
| 22428 | 7590 | 12/02/2005 | EXAMINER | |
| FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007 | | | CARIASO, ALAN B | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2875 | |

DATE MAILED: 12/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/715,120

Applicant(s)

SUZUKI, EIJI

Examiner

Alan Cariaso

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 13 is/are allowed.
6) ☒ Claim(s) 1-8, 10-12 and 14 is/are rejected.
7) ☒ Claim(s) 9 and 15 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Receipt of applicant's amendment filed September 21, 2005 is acknowledged.

Claims 1-15 are pending. Claims 1-6 are amended. Claims 9-15 are newly submitted.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-8, 10, 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over YOKOI (US 2001/0010634 A1) in view of LINDEROTH, Jr. ("Spring (machines)").
4. YOKOI discloses a headlamp comprising: a light source (18,18a, fig.1), a shade (22) that forms a light distribution pattern for a low beam when the shade is in a low beam position (col.3, paragraph 0047) and light distribution pattern for a high beam when the shade is in a high beam position (col.3, paragraph 0047) with a light from the light source (18,18a); a solenoid (34) *configured to move* the shade (22) from the low beam position to the high beam position (fig.2) *inherently via a magnetic force associated with movable iron core 36 (cols.3-4, paragraph 0059)*; a stopper mechanism (22Bb,32 or 52 or 62 or 72, figs.2,4-11b) *configured to stop* the shade (22) at either the low beam position (figs.6a,8a,9a,10a,11a) and the high beam position

(figs.6b,8b,9b,10b,11b); and a spring (38) *configured to move* the shade (22) from the high position to the low beam position (col.3, paragraph 0048) *via an elastic force, wherein either or both the magnetic force and elastic force inherently induces an acceleration of the shade being moved at least from rest positions, meaning the speed of the moving shade changes when resultant force is applied*; wherein the stopper mechanism (22Bb,62, figs.10a,10b) comprises a stopper (62,fig.10) including one or more protrusions (1s1,1s2,1s3,2s1,2s2,2s3, fig.10b); and one or more abutting surfaces (22Bb1,22Bb3,22Bb4) of the shade (22B,22) abut against the one or more protrusions (1s1,1s2,1s3,2s1,2s2,2s3, fig.10b) when the shade is in either of the low beam position (fig.10a) and the high position (fig.10b); wherein the one or more protrusions (1s1,1s2,1s3,2s1,2s2,2s3, fig.10b) have angles (surfaces with ← in fig.10a) with respect to a longitudinal direction (figs.8a,8b) of the solenoid (34), and each of the protrusions (1s1,1s2,1s3,2s1,2s2,2s3, fig.10b) are provided in parallel to the corresponding abutting surfaces (figs.10a,10b); wherein the protrusions have an elasticity (col.5, paragraph 0080); wherein the stopper (62) includes at least four protrusions (1s1, 1s2, 1s3, 2s1, 2s2, 2s3, fig.10b); wherein the solenoid (34) is a pull-type solenoid (fig.6b, col.4, paragraph 0061); wherein the spring (38) is positioned between the solenoid (34) and a portion (22B) of the shade (22); wherein at least part of the shade (22A, figs.2-4) is curved to form a hollow portion (figs.3 & 4), and the light source (18) is positioned in the hollow portion (figs.3 & 4).

5. However, YOKOI does not disclose: a difference between the magnetic force and the elastic force not being constant (claim 1) at least along the distance of the core

movement; four abutting surfaces included with the shade (claim 6); the elastic force of the spring changes as the spring shifts position (claim 10).

6. LINDEROTH teaches that springs commonly have surging, the inability of all parts of the spring to deflect at the same rate due to the inherent inertia in the coils (see Design section, last paragraph), and therefore the force of the spring has some inherent variability. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the spring loaded solenoid apparatus of the vehicle headlamp of YOKOI to include inherent surging of the spring that changes the elastic force of spring as taught by LINDEROTH, applying variable force on the solenoid core and therefore producing a non-constant difference between magnetic and elastic forces of the spring loaded solenoid apparatus that would further vary the variable speed of the moving shade.

7. In regards to the shade having four abutting surfaces, it would have been obvious to one having ordinary skill in the art at the time the invention was made to duplicate the two lower abutting surfaces (22Bb3, 22Bb4, fig.10b) on the shade (22) onto the top abutting surface (22Bb1) with corresponding two receiving abutting surfaces on top spring portion (deviation-preventing member 62) duplicated from bottom resilient springs (62D1, 62D2), since it have been held that a mere duplication of working parts of a device involves only routing skill in the art (In re Harza, 274 F.2d 669, 124 USPQ 378). One would have been motivated to duplicate the lower two abutting surfaces (22Bb3, 22Bb4) of shade leg (22B) to make two top abutting surfaces to form a total of four abutting surfaces, to enable secure fitting catch of the shade arm into

corresponding number of receiving top and bottom parts of deviation-preventing member (62) forming stable stop positions of the moving shade arm at both high and low positions.

8. Claims 1, 2, 8, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over LACHMAYER et al (US 5,899,559) in view of LINDEROTH, Jr. ("Spring (machines)").

9. LACHMAYER discloses a headlamp comprising: a light source (2, fig.1), a shade (4) that forms a light distribution pattern for a low beam when the shade is in a low beam position and light distribution pattern for a high beam when the shade is in a high beam position (col.3, lines 25-35) with a light from the light source (2), a solenoid (6, col.3, lines 53-59) *configure to move* the shade (4) from the low beam position to the high beam position (col.3, lines 57-61) *via a magnetic force*, a stopper mechanism (35,19, fig.7) *configure to stop* the shade (4) either of the low beam position to the high beam position (col.4, lines 61-65), and a spring (17) *configured to move* the shade (4) from the high position to the low beam position *via an elastic force, wherein a difference or the resultant force between the magnetic force and the elastic force changes a moving speed of the shade as the shade moves position, due to acceleration induced by the resultant force*; wherein the spring (17) *includes* a cone-shaped coil spring (fig.7); wherein the solenoid is a pull-type solenoid (fig.6); *wherein the spring (17, fig.6) is positioned between the solenoid (21) and a portion (4, fig.6) of the shade (4).*

10. However, LACHMAYER does not disclose: the difference between the magnetic force and the elastic force not being constant (claim 1), at least along the distance of the core movement; the elastic force of the spring changes as the spring shifts position (claim 10).

11. LINDEROTH teaches that springs commonly have surging, the inability of all parts of the spring to deflect at the same rate due to the inherent inertia in the coils (see Design section, last paragraph), and therefore the force of the spring has some inherent variability. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the spring loaded solenoid apparatus of the vehicle headlamp of LACHMAYER to include inherent surging of the spring as taught by LINDEROTH, applying variable force on the solenoid core and therefore producing a non-constant difference or non-constant resultant force between magnetic and elastic forces of the spring loaded solenoid apparatus along the distance of the movement that would further vary the variable speed of the moving shade.

12. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over YOKOI (US 2001/0010634 A1) in view of LINDEROTH, Jr. ("Spring (machines)") as applied to claims 1, 3-8, 10 and 11 above, and further in view of MEISEL ("Solenoid (electricity)").

13. YOKOI modified by LINDEROTH, Jr. above discloses the claimed invention except that magnetic force of the solenoid changing as the solenoids shifts position.

14. MEISEL teaches that the force for the solenoid rapidly increases as the plunger enters the coil because of the rapid rate of change of the reluctance for the magnetic

path, as further illustrated in fig.1(a & b). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the solenoid in the headlamp device of YOKOI that includes changing magnetic force of the solenoid as taught by MEISEL because of the rapid rate of change of the reluctance for the magnetic path that occurs in a moving solenoid plunger within the coil.

Allowable Subject Matter

15. Claim 9 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. Claim 13 is allowed.

17. The following is a statement of reasons for the indication of allowable subject matter: None of the prior art of record suggests: the shade sliding along a surface of the stopper when the solenoid and spring move the shade; a stopper mechanism that stops the shade at either of the low beam position and the high beam position with the solenoid and spring move the shade, the shade slides substantially parallel to an optic axis of the light source; when the solenoid and spring move the shade, the shade slides on surface of the stopper mechanism.

Response to Arguments

18. Applicant's arguments with respect to the rejection(s) of claim(s) 1 under YOKOI and LACHMAYER have been fully considered and are persuasive. Therefore, the

rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of at least LINDEROTH, Jr. The claimed difference between magnetic force and elastic force not being constant, is shown to be obvious by the teachings of LINDEROTH, Jr. and MEISEL, in regards to the spring and solenoid, respectively.

19. In response to applicant's reason to change the speed of the shade movement, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art and understanding of general physics that a force applied to objects accelerate or decelerate them cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. PENGUIN ("force Symbol: F ") teaches that a resultant force F acting on a body of constant mass m is equal to ma , where a is the acceleration of the body and has the direction of a , meaning the velocity changes. TANIUCHI (US 6,179,455) shows a shade or shield (94) movable by an actuator in a direction parallel to the light source or lamp axis (fig.7) to form analogous low beam distribution (S or M1) and high beam distribution (M2). TATSUKAWA (US 6,837,601) shows a spring-loaded solenoid (28) with plunger (28a) axially moving a cylindrical shade (26) around and along the elongate light bulb (22) of a vehicle lamp device.

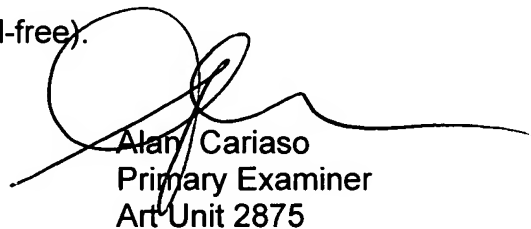
21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Carias whose telephone number is (571) 272-2366. The examiner can normally be reached on 9-5:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alan Cariaso
Primary Examiner
Art Unit 2875

November 29, 2005
AC